Amendments to the Claims:

1. (currently amended) In a wireless communication system for transmitting and receiving data by using a multipath fading channel, an OFDM (orthogonal frequency division multiplexing) wireless communication system comprising:

a transmitter for performing IDFT (inverse discrete Fourier transform) on ~~an~~ information transmit vectors at least twice to modulate [[it]]them into an OFDM (orthogonal frequency division multiplexing) signals, transmitting the modulated OFDM signals through a multipath fading channel, modulating a pilot symbol vector for predicting an amplitude and a phase of the multipath fading channel into an OFDM signal, and transmitting the modulated OFDM signal through the multipath fading channel; and

a receiver for demodulating the pilot symbol vector received through the multipath fading channel to predict the amplitude and the phase of the multipath fading channel, using the predicted amplitude and phase to compensate the amplitude and the phase multiplied to the received information transmit vectors, performing DFT (discrete Fourier transform) on the compensated information transmit vectors to average a noise signal value increased by the channel compensation in a specific interval with an amplitude of the channel with less than a mean value into a mean value within an OFDM symbol interval, and outputting the mean value,

wherein the transmitter comprises a first IDFT unit for performing IDFT on the information transmit vectors and outputting IDFT-performed signals; and a second IDFT unit for performing IDFT on the IDFT-performed signals output from the first IDFT unit to modulate them into OFDM signals, and

wherein the receiver comprises a first DFT unit for demodulating the received information transmit vectors into OFDM signals; and a second DFT unit for performing DFT on the compensated information transmit vectors and averaging a noise signal value which becomes enhanced in a specific interval with an amplitude of the channel with less than a mean value, to a mean value within a symbol interval.

2. (currently amended) The OFDM wireless communication system of claim 1, wherein the transmitter comprises:

a mapper for mapping an externally received binary information sequence to symbols according to the MQAM (M-ary quadrature amplitude modulation) method;

a serial to parallel converter for converting the mapped symbols into vector data that are information transmit vectors and outputting the information transmit vectors to the first IDFT;

~~a first IDFT unit for performing IDFT on the converted information transmit vectors;~~

~~a second IDFT unit for performing IDFT on the IDFT-performed signals to modulate them into OFDM signals;~~

a third IDFT unit for modulating a pilot symbol vector for predicting the amplitude and phase of the multipath fading channel into an OFDM signal; and

a parallel to serial converter and guard interval inserter for inserting a guard interval into the signals received from the second IDFT unit, converting the guard interval inserted information transmit vectors into a serial signal and transmitting it, and converting the guard interval inserted pilot symbol vector into ~~a~~ serial signals and transmitting it.

3. (currently amended) The OFDM wireless communication system of claim 2, wherein the receiver comprises:

a guard interval eliminator and serial to parallel converter for eliminating the guard interval from the converted and received serial signal, and converting the guard interval eliminated serial signal into an information transmit vector and a pilot symbol vector respectively;

~~a first DFT unit for demodulating the converted information transmit vector into an OFDM signal;~~

a third DFT unit for demodulating the converted pilot symbol vector into an OFDM signal;

a channel predictor and interpolator for predicting the amplitude and phase of the multipath fading channel using the demodulated pilot symbol vector;

a channel compensator for compensating the amplitude and phase of the channel multiplied to the demodulated information transmit vector according to the predicted amplitude and phase of the channel;

~~a second DFT unit for performing DFT on the compensated channel signal, and averaging a noise signal value which becomes enhanced in a specific interval with an amplitude of the channel with less than a mean value, to a mean value within a symbol interval;~~

a parallel to serial converter for converting the signal received from the second DFT unit into ~~a~~ serial signals; and

a decoder for restoring the converted serial signals into a binary information sequence, and outputting the binary information sequence.

4. (currently amended) The OFDM wireless communication system of claim 2, wherein the channel compensator compensates the amplitude and phase of the channel through the MMSE (minimum mean square error) equalization method using the predicted amplitude and phase of the channel, and the MMSE equalization method satisfies the equation:

$$\hat{\mathbf{x}}_i^j(k) = \frac{r_i^j(k)\hat{H}_i^{j*}(k)}{\left|\hat{H}_i^{j*}(k)\right|^2 + \sigma_w^2/\sigma_x^2 + \sigma_I^2}$$

here $\hat{H}_i^{j*}(k)$ is the predicted amplitude and phase of the channel, σ_w^2 and σ_x^2 are mean power values of the OFDM signals and an AWGN (additive white Gaussian noise) signal, and σ_I^2 is a mean power value of an ICI (interchannel interference) signal.

5. (original) The OFDM wireless communication system of claim 4, wherein the channel compensator compensates the amplitude and phase of the channel through the ZF (zero forcing) equalization method using the predicted amplitude and phase of the channel, and the ZF equalization method satisfies the equation:

$$\hat{\mathbf{x}}_i^j(k) = \frac{r_i^j(k)\hat{H}_i^{j*}(k)}{\left|\hat{H}_i^{j*}(k)\right|^2}.$$

6 (original) The OFDM wireless communication system of claim 4, wherein the channel compensator compensates the amplitude and phase of the channel through a gain limit equalization method using the predicted amplitude and phase of the channel, and the gain limit equalization method satisfies the equation:

$$\hat{\mathbf{x}}_i^j(k) = \frac{r_i^j(k)\hat{H}_i^{j*}(k)}{\left|\hat{H}_i^{j*}(k)\right|^2 + \sigma}$$

where σ is a constant used for gain limits.

7. (currently amended) A wireless communication system including a transmitter for transmitting data using a multipath fading channel and a receiver for receiving them from the transmitter, comprising:

a mapper for mapping an externally received binary information sequence to at least one symbol according to the MQAM (M-ary quadrature amplitude modulation) method;

a serial to parallel converter for converting the mapped symbols into vector data which are information transmit vectors;

a first IDFT (inverse discrete Fourier transform) unit including ~~at least one (preferably M)~~ m IDFT [[unit]] units for performing IDFT on the converted information transmit vectors;

an interleaver for writing subchannel values of the respective transmit vectors received from the IDFT unit in an ~~MxN~~ mxn memory buffer in the first direction;

a second IDFT unit including ~~at least one (preferably M)~~ n IDFT [[unit]] units for reading the subchannel values written in the first direction in the second direction when the writing in the first direction is finished, performing IDFT on the read subchannel values, and modulating them to OFDM (orthogonal frequency division multiplexing) signals;

a third IDFT unit for modulating a pilot symbol vector for predicting an amplitude and a phase of the multipath fading channel to an OFDM signal; and

a parallel to serial converter and guard interval inserter for inserting a guard interval into the signal received from the second IDFT unit, converting the guard interval inserted information transmit vector into a serial signal, transmitting the serial signal, converting the guard interval

inserted pilot symbol vector into a serial signal, and transmitting it to the transmitter.

8. (withdrawn) The wireless communication system of claim 7, further comprising:

a guard interval eliminator and serial to parallel converter for eliminating the guard interval from the converted and received serial signal, and converting the guard interval eliminated serial signal into an information transmit vector and a pilot symbol vector respectively;

a first DFT unit including at least one DFT unit for demodulating the converted information transmit vector into an OFDM signal;

a third DFT unit for demodulating the converted pilot symbol vector into an OFDM signal;

a channel predictor and interpolator for predicting the amplitude and phase of the multipath fading channel using the demodulated pilot symbol vector;

a channel compensator for compensating the amplitude and phase of the channel multiplied to the demodulated information transmit vector according to the predicted amplitude and phase of the channel;

a deinterleaver for writing the compensated channel signals in an MxN memory buffer in the first direction;

a second DFT unit including at least one (preferably M) DFT unit for reading the signal with less channel autocorrelations in the second direction from among the channel compensated signals written in the first direction, performing DFT on the read signals, and demodulating them into OFDM signals;

a parallel to serial converter for converting the demodulated signals into serial signals; and

a decoder for restoring the converted serial signals into a binary information sequence, and outputting the binary information sequence.

9. (withdrawn) The wireless communication system of claim 8, wherein the interleaver sequentially writes subchannel values of the received transmit vector in the MxN memory buffer

in the vertical direction (temporal direction), and

the deinterleaver sequentially writes the channel compensated signals in the MxN memory buffer in the diagonal direction (temporal direction).

10. (withdrawn) The wireless communication system of claim 8, wherein the interleaver sequentially writes subchannel values of the received transmit vector in the MxN memory buffer in the diagonal direction (temporal direction and frequency direction), and

the deinterleaver sequentially writes the channel compensated signals in the MxN memory buffer in the diagonal direction (temporal direction and frequency direction).

11. (withdrawn) The OFDM wireless communication system of claim 3, wherein the transmitter comprises:

M N_I-point IDFT units (where N_I is a number less than a number N, and $N=MN_I$); and

an interleaver of an MxN_I memory buffer for receiving a signal from the first IDFT unit and applying the signal to the second IDFT unit, and

the receiver comprises:

M N_I-point DFT units (where N_I is a number less than a number N, and $N=MN_I$); and

a deinterleaver of an MxN_I memory buffer for receiving a signal from the first DFT unit and applying the signal to the second DFT unit.

12. (withdrawn) The wireless communication system of claim 8, wherein the transmitter comprises:

LxM N_I-point IDFT units (where N_I is a number less than a number N, and $N=MN_I$); and

an interleaver of an $LxMxN_I$ memory buffer for receiving a signal from the first IDFT nit and applying the signal to the second IDFT unit, and

the receiver comprises:

LxM N_I-point DFT units (where N_I is a number less than a number N, and $N=MN_I$); and

a deinterleaver of an $LxMxN_I$ memory buffer for receiving a signal from the first DFT

unit and applying the signal to the second DFT unit.

13. (currently amended) A method for compensating a channel in a wireless communication system for transmitting and receiving data using a multipath fading channel, comprising:

(a) performing IDFT (inverse discrete Fourier transform) on ~~a vector for~~ information transmission vectors at least twice to modulate the vectors into ~~an~~ OFDM (orthogonal frequency division multiplexing) signals, and transmitting the modulated signal through the multipath fading channel;

(b) modulating a pilot symbol vector for predicting an amplitude and a phase of the multipath fading channel into an OFDM signal, and transmitting the modulated signal through the multipath fading channel;

(c) demodulating the pilot symbol vector received through the multipath fading channel to predict the amplitude and the phase of the multipath fading channel;

(d) compensating the amplitude and the phase of the channel multiplied to the received information transmit vectors by using the predicted amplitude and the phase of the channel; and

(e) performing DFT on the compensated channel signals, averaging a noise signal value enhanced by the channel compensation in a specific interval with an amplitude of the channel with less than a mean value into a mean value within an OFDM symbol interval, and outputting the mean value,

wherein (a) comprises performing a first IDFT on the information transmit vectors and outputting IDFT-performed signals; and performing a second IDFT on the IDFT-performed signals to modulate them into OFDM signals, and

wherein (d) comprises performing a first DFT for demodulating the received information transmit vectors into OFDM signals; and performing a second DFT on the compensated information transmit vectors and averaging a noise signal value which becomes enhanced in a specific interval with an amplitude of the channel with less than a mean value, to a mean value within a symbol interval.

14. (currently amended) The method of claim 13, wherein (e) comprises using the MMSE (minimum mean square error) equalization method to compensate the amplitude and the phase of the channel multiplied to the received transmit vectors.

15. (currently amended) The method of claim 13, wherein (e) comprises using the ZF (zero forcing) equalization method to compensate the amplitude and the phase of the channel multiplied to the received transmit vectors.

16. (currently amended) The method of claim 13, wherein (e) comprises using the gain limit equalization method to compensate the amplitude and the phase of the channel multiplied to the received transmit vectors.

17. (withdrawn) The method of claim 13, wherein (a) comprises:

writing the subchannel values of the information transmit vector in an MxN memory buffer in the first direction; and

reading the subchannel values in the second direction when the writing in the first direction is finished.

18. (withdrawn) The method of claim 17, wherein (e) further comprises:

writing the compensated channel signals in the MxN memory buffer in the first direction; and

reading the signals with less autocorrelations of the channel in the second direction from among the channel compensated signals written in the first direction.

19. (withdrawn) The method of claim 17, wherein the writing in the first direction comprises writing the subchannel values of the information transmit vector or the channel compensated signals in the MxN memory buffer in the vertical direction (temporal direction).

20. (withdrawn) The method of claim 17, wherein the writing in the first direction

comprises writing the subchannel values of the information transmit vector or the channel compensated signals in the MxN memory buffer in the diagonal direction (temporal direction and frequency direction).

21. (withdrawn) The wireless communication system of claim 8, wherein the transmitter and the receiver comprise an MxN-point IDFT unit and an MxN-point DFT unit, respectively, and a noise reduction mean interval of the receiver is extended to MxN points by using the MxN memory buffer of the transmitter.

22. (withdrawn) The OFDM wireless communication system of claim 2, wherein the parallel to serial converter and guard interval inserter inserts a guard interval into the information transmit symbol vector received from the serial to parallel converter, converts the guard interval inserted information transmit symbol vector into a serial signal, and transmits the serial signal.

23. (withdrawn) The OFDM wireless communication system of claim 2, wherein the parallel to serial converter and guard interval inserter performs IDFT on the pilot symbol vector with the minimum PAR (peak to average ratio), inserts a guard interval into the converted pilot symbol vector, converts the guard interval inserted pilot symbol vector into a serial signal, and transmits the serial signal.

24. (withdrawn) The OFDM wireless communication system of claim 23, wherein the pilot symbol vector optimized with respect to the PAR is modulated through the IDFT and stored in the memory, and when necessary, the parallel to serial converter and guard interval inserter reads the stored pilot symbol vector, converts the pilot symbol vector, and transmits the converted pilot symbol vector.